1. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$(-9 - 10i)(-3 - 2i)$$

A. $a \in [44, 52]$ and $b \in [-13, -7]$

B. $a \in [5, 13]$ and $b \in [45, 52]$

C. $a \in [44, 52]$ and $b \in [9, 16]$

D. $a \in [5, 13]$ and $b \in [-48, -41]$

E. $a \in [27, 35]$ and $b \in [14, 25]$

---

2. Choose the **smallest** set of Real numbers that the number below belongs to.

$$-\sqrt{\frac{12}{0}}$$

A. Whole

B. Irrational

C. Not a Real number

D. Integer

E. Rational

---

3. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$(-7 - 4i)(6 - 3i)$$

A. $a \in [-44, -41]$ and $b \in [7, 16]$

B. $a \in [-32, -28]$ and $b \in [42, 49]$

C. $a \in [-57, -52]$ and $b \in [3, 5]$

D. $a \in [-32, -28]$ and $b \in [-47, -40]$

E. $a \in [-57, -52]$ and $b \in [-7, -2]$

4. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$\frac{36 + 33i}{6 - 8i}$$

A. $a \in [4.4, 5.3]$ and $b \in [-1.5, 0.5]$

B. $a \in [-48.35, -47.25]$ and $b \in [4, 6.5]$

C. $a \in [-0.9, 0.45]$ and $b \in [485.5, 486.5]$

D. $a \in [-0.9, 0.45]$ and $b \in [4, 6.5]$

E. $a \in [5.95, 6.45]$ and $b \in [-5, -3]$

5. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$\frac{-9 + 22i}{-3 + 4i}$$

A. $a \in [3.5, 5]$ and $b \in [-2, -1]$

B. $a \in [3.5, 5]$ and $b \in [-30.5, -29]$

C. $a \in [114.5, 115.5]$ and $b \in [-2, -1]$

D. $a \in [2.5, 3.5]$ and $b \in [3.5, 6.5]$

E. $a \in [-3, -2]$ and $b \in [-5.5, -3.5]$

6. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\sqrt{\frac{0}{49}} + \sqrt{4}i$$

A. Pure Imaginary

B. Nonreal Complex

C. Irrational

D. Rational

E. Not a Complex Number

---

7. Simplify the expression below and choose the interval the simplification is contained within.

$$5 - 16^2 + 19 \div 4 * 11 \div 20$$

A. $[262.9, 263.9]$

B. $[-255.4, -249.1]$

C. $[-249.7, -247.8]$

D. $[259.8, 261.5]$

E. None of the above

---

8. Choose the **smallest** set of Real numbers that the number below belongs to.

$$-\sqrt{\frac{1430}{10}}$$

A. Whole

B. Rational

C. Irrational

D. Integer

E. Not a Real number

---

9. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\frac{16}{16} + 81i^2$$

A. Rational

B. Not a Complex Number

C. Pure Imaginary

D. Nonreal Complex

E. Irrational

---

10. Simplify the expression below and choose the interval the simplification is contained within.

$$2 - 10 \div 7 * 16 - (14 * 4)$$

A. $[-57.09, -50.09]$

B. $[-78.86, -75.86]$

C. $[49.91, 63.91]$

D. $[-139.43, -138.43]$

E. None of the above
